platina 2

Implementing the European Action Programme
for the promotion of inland waterway transport (NAIADES 2)

Is inland waterway transport ready for continental cargo?

Inland waterway transport already has a large share in transport in North-West Europe. But if you check the numbers on continental transport, IWT is virtually non-existing even though there is potential and connections are getting better. According to the PLATINA 2 analysis, the lack of uptake of inland shipping is hampered by cost, the availability of an appropriate multimodal unit and business models. Cooperation between logistics players and sharing of information are key to move continental cargo by water.

European Commission

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Macro analysis of the potential of continental cargo

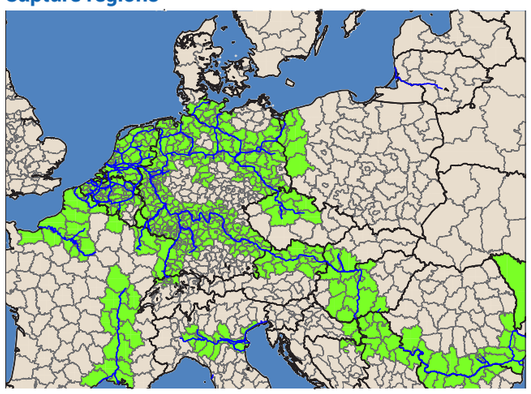
The market potential for the continental waterway transport market was investigated at NUTS-3 regions level. The origin-destination flows of the cargo on the road and by maritime containers between regions that are also serviced by inland shipping were compared. The import/export flows were mapped and the potential for continental containerised cargo to be shipped by waterway was analysed.

The macro analysis demonstrates that 87 million tonnes of the continental cargo currently transported by road is suited for intermodal transport along to the existing waterway corridors with the potential to save up to 10% transport costs.

Potential modal shift volumes: Road continental flows

Regions / corridors	Tonnes
Antwerp (BE) / Rotterdam (NL) – Middle Danube (HU)	70,840,054
Antwerp (BE) / Rotterdam (NL) – Czech R. (including freight transported between these regions)	31,599,014
Koblenz (DE) / Rotterdam (NL) – Moselle (FR/LU/DE)	27,053,125
Antwerp (BE) / Rotterdam (NL) – Poland	12,318,482
Rhône – Saône Bassin (FR)	16,049,483
Antwerp (BE) / Rotterdam (NL) – Basel (CH) (including freight transported between these regions)	14,645,963
Antwerp (BE) / Rotterdam (NL) – Neckar	13,102,238
North-West France (FR) – Ruhr Area (DE)	25,883,996
Ruhr Area (DE) – Bremen (DE)	6,213,355
Antwerp (BE) – Rotterdam (NL) – Northern Netherlands (NL)	5,506,347
Middle Danube (HU) – Lower Danube (RO)	2,844,048
Ruhr Area (DE) – Northern Netherlands (NL)	2,722,914
Ruhr Area (DE) – Hamburg (DE)	2,086,098
Po River (IT)	2,052,215
Seine River Bassin (FR)	1,671,564

Capture regions



Success factors for modal shift

As a top-down approach was used to determine the continental multimodal market potential, there was also a need to have a more bottom-up approach to identify the current market structure of the containerized continental market and what is needed to make the shift happen.

1. Modal shift case studies confirm the cost factor for shifting cargo

Existing case studies of modal shifts were analysed on an operational level to unveil the drivers of modal shift towards the use of inland shipping:

- Cost reduction for the shipper further to intermodal shift: less road taxes, less delay due to road congestion;
- Efficiency in the operational flows reduces costs too;
- Handling costs: the "vertical transport" or transhipment is the preponderant element in the transport cost and the key to an efficient transport operation.

The 45' pallet wide high cube short sea shipping container seems the most appropriate intermodal unit for continental container transport, but 45-feet containers are not available in large numbers in the hinterland. Specific attention should be given how to make this container available on a wider scale.

2. The business model is decisive

Shifting continental cargo to inland shipping is difficult. Chain market parties do not spontaneously share information and cooperate.The "shipping line perspective" and "deep sea terminal perspective" mainly focus on import and export of maritime containers. The "hinterland perspective", the "service area perspective" and the "neutral service provider perspective" offer more possibilities since bundling of container flows and more efficiency in operational flows deliver added value for their services.

Hub and Spoke: a new cooperation operational model

In a Hub and Spoke network, one terminal serves as the hub. All of the remaining terminals transports take place via the hub, even if terminals are close to each other. The barges collecting containers at inland terminals in the hinterland sail to a hub terminal where all containers are unloaded. The containers are grouped on the hub by destination.

This concept is not yet widespread but is interesting because of the advantages provided by bundling of cargo:

- Improving the efficiency of the existing services: the exchange of containers make it possible to plan fewer stops at the terminals in the seaport
- Achieving the required frequency of timetables and become a serious alternative for road transport
- Providing also a continental cargo piggyback with the maritime transport services between ports and hinterland.

The Hub and Spoke system could be the way to go for further capturing the continental cargo flows, taking into account the identified bottlenecks need to be solved in order to make optimal use of this service model.

Hub & Spokes for continental cargo

New continental cargo service, the combination of the BCTN hub terminals in Rotterdam-East & Nijmegen and Danser's Rhine network, offers door-to-door opportunities in continental Europe. Switzerland, South Germany, the North-East of France and Eastern Netherlands on a regular basis.

" It is estimated that 87 million tonnes of continental container cargo currently transported by road could be shifted to multimodal waterway transport, saving 10% transport costs."

3. From 'Knowledge is Power' to 'Sharing Knowledge is More Powerful'

Improvement of information exchange in all kind of aspects could help to stimulate the modal shift. Looking at the business case of the Hub and Spoke system it became clear that throughout the whole transport chain more concrete and accurate information is needed to persuade parties to shift their cargo from road to the waterway.

Information to potential clients:

- Information about the cost efficiency of barge transportation
- Information about the logistics process that is needed: lead times, onward transportation to inland terminals etc.
- More transparent information about the availability and reliability of transport services

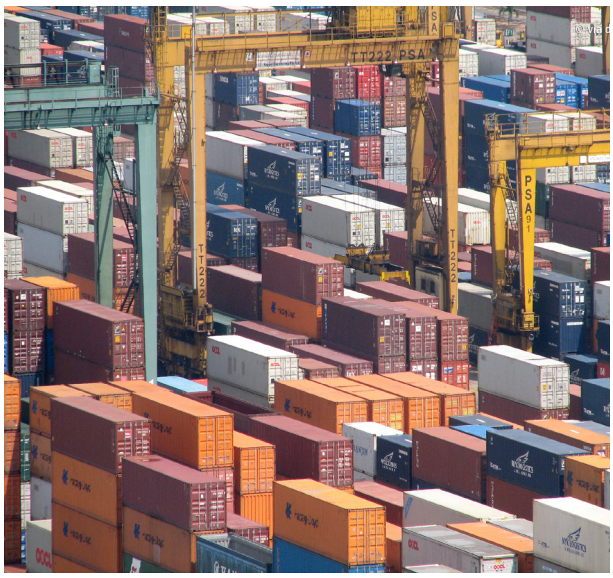
This information should proactively shared with shippers by neutral logistics advisors or during business dating events.

Exchange between logistics players:

- Share information about cargo flows, exchange cargo and jointly utilize resources such as the capacity of vessels and terminals
- Exchange to improve occupancy rate of available resources like broadening/improving flexibility of opening hours of terminals, repositioning of empty containers

Despite obvious improvements in quality and efficiency of inland navigation, exchange of information will not be easy to realise. A solution could be to get a neutral party involved as a catalyst to ensure this process of coordination and cooperation between chain parties.

PLATINA 2 is a multi-disciplinary project to implement the European Action Programme for the promotion of inland waterway transport (NAIADES 2). A consortium of 12 organisations from seven European countries including relevant stakeholder groups from the inland waterway transport sector, and in close cooperation with the European Commission, contributes to the promotion of inland waterway transport as a sustainable transport mode. It ran from autumn 2013 to spring 2016.



The project focused on 4 themes, for which the main conclusions were:

Markets & Awareness

- Research on market transparency and synergistic actions allows better understanding of market structure, opportunities and bottlenecks for enhanced cooperation in inland waterway transport.
- Promising high potential niche market segments in the Danube region revealed: high and heavy cargo, renewable energy resources & biomass and recycling material.
- High potential for continental cargo transport over water identified in several European regions

Infrastructure

- European inland navigation policy needs to consider differences of various waterway corridors.
- Large datasets for monitoring waterway infrastructure development in EU are fragmented and confidential. New options to use data for policy analysis identified.
- RIS already supports navigation and traffic management; needs to be developed for logistics operators.
- Regular rehabilitation & maintenance are essential for competitive waterway infrastructure and benefit from exchange of experiences across waterway corridors.

Innovation & Fleet

- Innovative technologies are available for greening of Inland waterways transport and is on display in the Greening Tool. Further work is needed on financing and emission rules.
- Recommendations on how to bridge main knowledge gaps will allow better calculation of the external cost of emissions to air from Inland waterways transport
- Most priority issues for research and innovation are tackled in EU and non-EU projects, some require further action, e.g. modernisation of small older ships.

Jobs & Skills

- Technical standards for ship-handling simulators provided a basis to introduce simulators as a tool to modernise and harmonise professional qualifications in Inland waterways transport.
- The concept for electronic service record books contributes to the creation of an equal level-playing field.
- Learning materials for future logistics decision makers create awareness and knowledge of Inland waterways transport as a modality in the transport chain.

The partners in the project:

- viadonau – Österreichische Wasserstraßen-Gesellschaft mbH (coordinator)
- Voies Navigables de France
- Bundesverband der Deutschen Binnenschiffahrt e.V.
- Promotie Binnenvaart Vlaanderen VZW
- Inland Navigation Europe
- Dutch Ministry of Infrastructure and the Environment
- PANTEIA BV
- Entwicklungszentrum für Schiffstechnik und Transportsysteme e.V.
- Centar za razvoj unutarnje plovidbe d.o.o.
- STC - Group
- Centrul Român pentru Pregătirea şi Perfecționarea Personalului din Transporturi Navale
- Stichting Dunamare Onderwijsgroep Haarlem

FOR MORE INFORMATION

www.naiades.info

Andreas Bäck, via donau - coordinator@naiades.info